



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No.:

Attorney Docket No.:

10/669,858

NTI1002US

Assignee: Nanotechnologies, Inc.

Examiner:

Not Assigned

For: Nanopowder Synthesis Using Pulsed Arc  
Discharge And Applied Magnetic Field

Art Unit:

Not Assigned

File Date: September 24, 2003

Inventors: Kurt Schroder & Doug Jackson

Commissioner For Patents  
U.S. Patent And Trademark Office  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

INFORMATION DISCLOSURE STATEMENT

Pursuant to 37 CFR § 1.97 and 1.98, Forms PTO/SB/08a and PTO/SB/08b are enclosed for consideration in the examination and prosecution of this case. A copy of each reference (eleven U.S. Patent Documents and two Publications) is enclosed herein.

No representation is made or intended that more relevant information does not exist, that the order of presentation of the enclosed materials represents order of importance or relevance, that any admissions of any kind is made with regard to the enclosed materials, or that any of the enclosed material is properly citable as prior art against this case.

Applicants respectfully submit that their invention is patentable over the enclosed and listed materials.

01/06/2004 HAL111 00000023 10669858

01 FC:1806

180.00 DP

Information Disclosure Statement  
U.S. Patent Application Ser. No. 10/669,858  
Page 2

In order to comply with 37 CFR §1.98, the U.S. Patent references are listed with their issue or publication dates:

1. US Pat. No. 5,514,349 issued on May 7, 1996; patentee: Nanophase Technologies Corporation.
2. US Pat. No. 5,581,507 issued on December 3, 1996; patentee: Dallas Semiconductor Corporation.
3. US Pat. No. 6,472,632 issued on October 29, 2002; patentee: Nanoscale Engineering and Technology Corporation.
4. US Pat. No. 5,847,684 issued on February 23, 1999; patentee: Nanophase Technologies Corporation.
5. US Pat. No. 6,190,634 issued on February 20, 2001; patentee: President and Fellows of Harvard College.
6. US Pat. No. 5,560,960 issued on October 1, 1996; patentee: The United States of America.
7. US Pat. No. 6,126,740 issued on October 3, 2000; patentee: Midwest Research Institute.
8. US Pat. No. 6,479,028 issued on November 12, 2002; patentee: The Regents of the University of California.
9. US Pat. No. 6,217,901 issued on April 17, 2001; patentee: Alnis, LLC.
10. US Pat. No. 6,472,374 issued on October 29, 2002; patentee: Cambridge University Technical Services Limited.
11. US Pat. App. Publication No. 20030108459, published on June 12, 2003; Inventors: L. W. Wu and Wen-Chiang Huang.

Publications include the following:

12. WEIHUA JIANG and KIYOSHI YATSUI, "Pulsed Wire Discharge for Nanosize Powder Synthesis", IEEE Transactions On Plasma Science, October 1998, Pages 1498-1501, Vol. 26, No. 5, IEEE, United States.
13. A. WEISENBURGER, "Application of Pulsed Power and Microwave Techniques for the Production of Nanocrystalline Powders and Ceramic Bulk Materials", Metastable, Mechanically Alloyed and Nanocrystalline Materials, year 2000, pp. 545-550, Materials Science Forum, vols. 343-346, Trans Tech Publishers Ltd., Switzerland.



PTO/SB/08a (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 2

**Complete if Known**

Application Number	10/669,858
Filing Date	9/24/03
First Named Inventor	Kurt Schroder
Art Unit	Not Assigned
Examiner Name	Not Assigned
Attorney Docket Number	NTI1002US

**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
	1	US- 5,514,349	05/07/1996	John C. Parker	
	2	US- 5,581,507	12/03/1996	Francis A. Scherpenberg	
	3	US- 6,472,632 B1	10/29/2002	Dennis Roger Peterson	
	4	US- 5,874,684	02/23/1999	John C. Parker	
	5	US- 6,190,634 B1	02/20/2001	Charles M. Lieber	
	6	US- 5,560,960	10/01/1996	Alok Singh	
	7	US- 6,126,740	10/03/2000	Douglas L. Schulz	
	8	US- 6,479,028 B1	11/12/02	Richard B. Kaner	
	9	US- 6,217,901 B1	04/17/2001	Michael G. Percott	
	10	US- 6,472,374 B1	07/04/1996	David Stephen Charnock-Jones	
	11	US2003/0108459	06/12/03	L.W. Wu	
		US-A1			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

**FOREIGN PATENT DOCUMENTS**

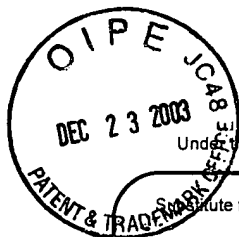
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				

Examiner  
SignatureDate  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet

2

of

2

**Complete if Known**

Application Number

10/669,858

Filing Date

9/24/03

First Named Inventor

Kurt Schroder

Art Unit

Not Assigned

Examiner Name

Not Assigned

Attorney Docket Number

NTI1002US

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	12	WEIHUA JIANG and KIYOSHI YATSUI, "Pulsed Wire Discharge for Nanosize Powder Synthesis", IEEE Transactions On Plasma Science, October 1998, Pages 1498-1501, Vol. 26, No. 5, IEEE, United States.	
	13	A. WEISENBURGER, "Application of Pulsed Power and Microwave Techniques for the Production of Nano- crystalline Powders and Ceramic Bulk Materials", Published in Metastable, Mechanically Allowed and Nanocrystalline Materials, year 2000, pp 545-550, Materials Science Forum, vols. 343-346, Trans Tech Publishers Ltd., Switzerland.	

Examiner  
SignatureDate  
Considered

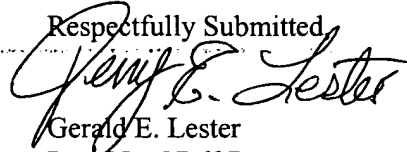
\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Information Disclosure Statement  
U.S. Patent Application Ser. No. 10/669,858  
Page 3

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Gerald E. Lester". The signature is fluid and cursive, with the first name "Gerald" and last name "Lester" being clearly legible.

Gerald E. Lester

Reg. No. 27,697

Law Office of Gerald E. Lester

22107 Fielder Dr.

Katy, Texas 77450

Ph. (281) 392-8288

Fx. (281) 392-2850



12-29-03

8

UNITED STATES PATENT AND TRADEMARK OFFICE

U.S. Patent Application No.:

10/669,858

Attorney Docket No.:

NTI1002US

Filing Date:

09/24/03

Examiner:

Not Assigned

Assignee/Applicant:

Nanotechnologies, Inc.

Art Unit:

Not Assigned

Inventors: Kurt Schroder &  
Doug Jackson

For: Nanopowder Synthesis Using Pulsed Arc  
Discharge And Applied Magnetic Field

Commissioner For Patents  
U.S. Patent And Trademark Office  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

EXPRESS MAIL CERTIFICATION UNDER 37 CFR 1.10

Express Mail No.

ER443716425US

Date Of Deposit

December 23, 2003

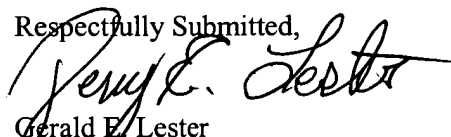
I hereby certify that the following items are being deposited with the United States Postal Service "Express Mail Post Office To Addressee" service under 37 CFR 1.10 on the date indicated above, and is addressed to Commissioner For Patents, U.S. Patent And Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 :

1. Form PTO/SB/08a (2 sheets);
2. Check In Amount Of \$180.00 US, Made Out To Director Of Patents And Trademarks;
3. Copies of eleven (11) U.S. Patent Documents and two (2) publications;
4. Cover Letter;

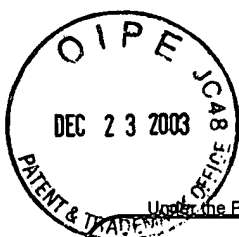
U.S. Patent Application Ser. No. 10/669,858  
Express Mail Certification  
Page 2

5. Transmittal Form;
6. Fee Transmittal Form;
7. Information Disclosure Statement (3 pages); And
8. Self-Addressed And Stamped Post Card For Receipt Of Official Date Stamp Of The US Patent And Trademark Office And Return To Addressee.

Respectfully Submitted,



Gerald E. Lester  
Reg. No. 27,697  
22107 Fielder Dr.  
Katy, Texas 77450  
Ph. No. 281-392-8288  
Fx. No. 281-392-2850



PTO/SB/21 (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**TRANSMITTAL  
FORM**

(to be used for all correspondence after initial filing)

Application Number 10/669,858

Filing Date 09/24/03

First Named Inventor Kurt Schroder

Art Unit Not Assigned

Examiner Name Not Assigned

Attorney Docket Number NTI1002US

Total Number of Pages in This Submission

**ENCLOSURES (Check all that apply)**

<input checked="" type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Group
<input checked="" type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Request for Refund	
<input checked="" type="checkbox"/> Information Disclosure Statement (2 pages)	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Certified Copy of Priority Document(s)	Remarks	
<input type="checkbox"/> Response to Missing Parts/Incomplete Application	Copies of eleven patent documents and two publications; check in amount of \$180.00; Express Mail Certification; Transmittal Form; Information Disclosure Statement (3 pages); Self-addressed and stamped post card; and form PTO/SB/08a & 08b.	
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm or Individual name	Gerald E. Lester
Signature	
Date	December 23, 2003

**CERTIFICATE OF TRANSMISSION/MAILING**

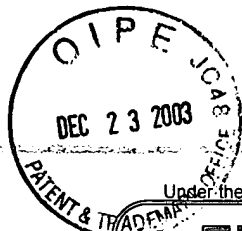
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	Gerald E. Lester		
Signature		Date	12/23/03

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.





PTO/SB/17 (10-03)

Approved for use through 07/31/2006. OMB 0651-0032  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

# FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27TOTAL AMOUNT OF PAYMENT (\$)**180.00****Complete if Known**

Application Number	10/669,858
Filing Date	9/24/03
First Named Inventor	Kurt Schroder
Examiner Name	Not Assigned
Art Unit	Not Assigned
Attorney Docket No.	NTI1002US

**METHOD OF PAYMENT (check all that apply)**☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☐ Deposit Account:Deposit Account Number  
Deposit Account Name

The Director is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Credit any overpayments☐ Charge any additional fee(s) or any underpayment of fee(s)☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 770	2001 385	Utility filing fee	
1002 340	2002 170	Design filing fee	
1003 530	2003 265	Plant filing fee	
1004 770	2004 385	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1)			(\$) <b>0.00</b>

**2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE**

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims	-20** =	X	
Multiple Dependent	-3** =	X	

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1202 18	2202 9	Claims in excess of 20	
1201 86	2201 43	Independent claims in excess of 3	
1203 290	2203 145	Multiple dependent claim, if not paid	
1204 86	2204 43	** Reissue independent claims over original patent	
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2)			(\$) <b>0.00</b>

\*\*or number previously paid, if greater; For Reissues, see above

**FEE CALCULATION (continued)****3. ADDITIONAL FEES**

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for <i>ex parte</i> reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 420	2252 210	Extension for reply within second month	
1253 950	2253 475	Extension for reply within third month	
1254 1,480	2254 740	Extension for reply within fourth month	
1255 2,010	2255 1,005	Extension for reply within fifth month	
1401 330	2401 165	Notice of Appeal	
1402 330	2402 165	Filing a brief in support of an appeal	
1403 290	2403 145	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,330	2453 665	Petition to revive - unintentional	
1501 1,330	2501 665	Utility issue fee (or reissue)	
1502 480	2502 240	Design issue fee	
1503 640	2503 320	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	180.00
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 770	2809 385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 770	2810 385	For each additional invention to be examined (37 CFR 1.129(b))	
1801 770	2801 385	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$)**180.00****SUBMITTED BY**

(Complete if applicable)

Name (Print/Type)	Gerald E. Lester	Registration No. (Attorney/Agent)	27,697	Telephone	281-392-8288
Signature	<i>Gerald E. Lester</i>	Date	12/23/03		

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.